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# The use of complementary/alternative medicine by cancer patients in a New Zealand regional cancer treatment centre

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**Abstract**

**Aim** To study the prevalence and patterns of complementary/alternative medicine (CAM) use in cancer patients managed by a New Zealand regional cancer treatment centre.

**Methods** A self-administered anonymous questionnaire was used to survey patients attending outpatient clinics of the MidCentral Regional Cancer Treatment Service. Questions addressed patient demographics, cancer diagnosis and conventional treatments received. CAM users were asked to identify types of therapies used, reasons for use, perceived effectiveness, safety and financial cost.

**Results** Questionnaires were distributed to 350 patients, with 200 assessable replies received. Overall, 49% of patients in this group used CAM, with vitamins, antioxidants, alternative diets, and herbal therapies the most commonly used agents and usage was more common in younger patients. CAM was used by 47% to improve quality of life and by 30% in the hope of a cure of their cancer. Of CAM users, 71% believed these therapies had been helpful in the management of their cancer, and 89% felt they were safe. Only 41% of users had discussed CAM with their oncologist and almost one third had started such therapies before being seen at the Cancer Treatment Centre. The median cost of CAM was NZ$55/month.

**Conclusions** CAM is commonly used by New Zealand cancer patients, who often use multiple therapies, not only during conventional treatment, but also without consultation with their oncologist. This lack of open communication about CAM between patients and medical staff may prevent identification not only of potential harmful effects, but also of positive and negative drug interactions between CAM and conventional therapies.

The use of Complementary/Alternative Medicine (CAM) is increasing worldwide. A national survey in the United States demonstrated an increase in use from 33.8% to 42.1% between 1990 and 1997.[1] The overall use of CAM in Australia was 48.5% in 1993, with a reported AU$981 million per annum spent by patients.[2]

There has been extensive literature published recently on the use of CAM by cancer patients, with the prevalence of reported use ranging from 22% in Australia, up to 70% in the United States and Canada.[3–5] Studies have also found that cancer patients have a higher usage of CAM than patients with other medical conditions.[6] In New Zealand, there has been recent public and media attention regarding the use of CAM, particularly in relation to the management of cancer.[7–9] There have been only three studies to date addressing the use of CAM in this country, none of which directly addressed the prevalence of use in cancer patients.[10–12]


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The aim of this study was to determine the prevalence of use by cancer patients attending outpatient clinics at a regional cancer treatment unit in New Zealand, and to identify types of CAM being used; reasons for use; satisfaction; and financial cost of CAM to the patient.

## Methods

Patients attending oncology outpatient clinics at either Palmerston North or Taranaki Base Hospitals, between April and December 2001, were offered a self-administered questionnaire by reception staff. Information sheets explaining the purpose of the study and return post-paid envelopes were attached. Responses were voluntary and anonymous and assumed consent.

The questionnaire obtained demographic, disease and treatment-related data, as well as expectations of conventional treatment for all patients. Patients using CAM were asked to indicate the types of CAM therapies used, and these were divided into multiple categories. CAM users were also asked about timing of CAM use, reasons for CAM use, its perceived effectiveness, and to describe any side effects. They were asked whether they had discussed CAM use with their oncologist, and to estimate the monthly financial cost of CAM therapies and of visits to CAM practitioners.

Data were entered into an Excel spreadsheet and StatView statistical package for analysis. Associations between patient characteristics and CAM use were assessed by bivariate analysis ($\chi^2$ test for categorical variable and t-test for continuous variables). A p value of 0.05 was considered significant.

This study was approved by the Whanganui-Manawatu and Taranaki Ethics Committees, and the Palmerston North Hospital Cancer Treatment Protocol & Research Committee.

### Table1. Characteristics of questionnaire respondents (n=200)

| | Non-CAM users | CAM users | Total |
|---|---|---|---|
| **Age** | | | |
| <30 | 4 | 3 | 7 |
| 31–50 | 23 | 38 | 61 |
| 51–70 | 46 | 38 | 84 |
| >70 | 28 | 17 | 45 |
| Unknown | 2 | 1 | 3 |
| **Sex** | | | |
| Male | 31 | 28 | 59 |
| Female | 72 | 69 | 141 |
| **Ethnicity** | | | |
| European | 92 | 81 | 173 |
| Maori | 11 | 15 | 26 |
| Asian | 1 | - | 1 |
| **Employment** | | | |
| Full-time | 27 | 28 | 55 |
| Part-time | 15 | 26 | 41 |
| Retired | 49 | 26 | 75 |
| Unemployed | 3 | 4 | 7 |
| Homemaker | 7 | 9 | 16 |
| Unknown | 2 | 4 | 6 |
| **Cancer diagnosis** | | | |
| Breast | 39 | 40 | 79 |
| NHL | 12 | 16 | 28 |
| Prostate | 8 | 10 | 18 |
| Colo/rectal | 9 | 9 | 18 |
| Ovarian | 7 | 5 | 12 |
| Lung | 1 | 7 | 8 |
| Hodgkin’s | 3 | 4 | 7 |
| Other | 14 | 4 | 18 |
| Unknown | 10 | 2 | 12 |

NHL=Non-Hodgkin’s lymphoma


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## Results

350 questionnaires were distributed and 203 (58%) of these returned. 200 were included in the analysis. The remaining three were excluded because patients had not indicated if they had used CAM therapies.

**Patient characteristics and conventional treatment** Characteristics of respondents are shown in Table 1. Ages ranged from 20–88 years, with a median age of 58 years. Females made up 71% of the total respondents; 86% of patients were European and 13% Maori. Breast cancer was the most common diagnosis (40%), with a range of other malignancies reflecting patients treated by Oncologists as outpatients. Cancer diagnosis was not indicated by 6% of patients.

Of all patients, 67% had received chemotherapy, 52% radiotherapy, and 22% hormonal treatments. Fifty two per cent of patients had the expectation that conventional treatment would cure their cancer, 46% that it would control the cancer and prolong life, and 12% expected it to improve symptoms and quality of life.

**Use of CAM** Of the 200 respondents, 97 patients (49%) reported using at least one form of CAM therapy. Of CAM users, 80% used more than one type of therapy, 40% reported using four or more different types of therapies, and 14% used at least seven different therapies.

Table 2 shows the types of CAM therapies used, with vitamins (68%), and antioxidants (54%), being the most frequent. Other commonly-used therapies were (in descending order of frequency of use) spiritual, diets, relaxation, herbal, imagery, naturopathy and massage.

**Table 2. Types of CAM therapies used**

| Type of CAM therapy | Patients (n=97) | |
|---|---|---|
| | n | % |
| Vitamins | 66 | 68 |
| Antioxidants | 52 | 54 |
| Spiritual | 27 | 28 |
| Diets | 26 | 27 |
| Relaxation | 24 | 25 |
| Herbal | 23 | 24 |
| Imagery | 22 | 23 |
| Naturopath | 19 | 20 |
| Massage | 16 | 17 |
| Aromatherapy | 13 | 12 |
| Detoxification | 12 | 12 |
| Chiro/osteopath | 10 | 10 |
| Acupuncture | 9 | 9 |
| Homeopathy | 9 | 9 |
| Electr/biomagnetic | 6 | 7 |
| Shark cartilage | 4 | 4 |
| Traditional/cultural | 4 | 4 |
| Hypnosis | 2 | 2 |
| Other | 19 | 20 |

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Over one third (35%) of patients began using CAM therapies before they were diagnosed with cancer, and 39% commenced them at the time of diagnosis. A significant proportion of patients (38%) reported using CAM during conventional treatment, and 20% only began using CAM following conventional treatment.

Most patients reported learning of CAM therapies from family (39%) and friends (41%); however a further 23% of patients gained information from media sources. Other cancer patients provided information about CAM therapies to 21% of patients. Of health professionals, doctors were a source of information for 14% of patients, while pharmacists and nurses were a less common source (8% and 2% respectively). Only 3% of patients reported gaining information from the Internet. Some patients cited more than one source of information.

**Reasons for CAM use** Nearly 50% of patients reported improvement in quality of life as one of the reasons they were using CAM. Reasons for CAM use are shown in Table 3, with many patients giving more than one reason. Over half of patients were using CAM in the hope of anticancer effects, with over one quarter (28%) of CAM users hoping for cure, and a further 30% for control of cancer.

**Table 3. Reasons for CAM use**

| Reason for use | Patients | |
|---|---|---|
| | n | % |
| Improve quality of life | 46 | 47 |
| Lessen side effects of conventional treatment | 42 | 43 |
| Prevent recurrence of cancer | 33 | 34 |
| Assist other treatments to work | 32 | 33 |
| Hope to control cancer | 31 | 32 |
| Hope of cure | 29 | 30 |
| To relieve symptoms | 25 | 26 |

**Patient characteristics associated with CAM use** Younger patients were significantly more likely to use CAM than older patients ($p = 0.01$). There was no difference between CAM users and non-users with regards to gender, ethnicity, employment status, diagnosis, or conventional treatment received. Patients whose expectation of conventional treatment was that it would improve symptoms and quality of life, rather than cure cancer or prolong life, were significantly more likely to use CAM ($p = 0.03$)

**Helpfulness and safety of CAM** Patients were asked to rank on a numerical scale from 1 to 5 how helpful they felt CAM therapies had been in the treatment of their cancer, (1 being not at all helpful, 5 being extremely helpful). Of CAM users, 71% felt these therapies had given them some benefit and, of those, 32% thought they had been extremely helpful. Only 6% thought that the CAM had not been helpful at all.

When asked if they believed CAM therapies were safe, 89% felt they were, 5% did not know, and 5% did not answer. Only one patient in this study thought CAM therapies were unsafe. Most patients using CAM also stated that they had not been aware of any side effects from CAM therapies (91%). Only four patients reported having side effects, and 6% did not answer this question.


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**Cost** The estimated financial cost of CAM therapies, including visits and travel to complementary/alternative practitioners ranged from NZ$0–650 a month, with the median amount spent being NZ$55 a month and the average NZ$102.

**Discussions with oncologist** Only 41% of CAM users had informed their oncologist that they were using CAM, 54% had not informed their oncologist, and 5% did not answer this question. Older patients were significantly less likely to inform oncologists than younger patients ($p = 0.0002$).

## Discussion

Our study is the first to directly assess the prevalence of CAM use in New Zealand cancer patients, and to compare the characteristics of CAM and non-CAM users. The Clinical Oncology Group carried out a survey in 1987 of medical advice concerning alternative treatments given to cancer patients in several New Zealand centres. They found that 32% of patients had been given advice about alternative medicine, 65% of whom intended to follow some of the treatment advice. However, the study did not assess the actual prevalence of CAM use.[10]

We found that 49% of cancer patients reported using at least one form of CAM therapy. As response to the survey was voluntary and anonymous, no information was obtained about non-responders. This may have created a potential selection bias if non-responders over-represented a particular subgroup. Anonymity of the survey, however, was designed to minimise nondisclosure of CAM use due to fear of disapproval. Patients who choose CAM therapies as their sole treatment for cancer are also not represented, as they are unlikely to be attending oncology clinics. The prevalence of CAM use in our centre is consistent with reports from other countries.[3–5,13,14] In a systematic review of published data of 26 surveys from 13 countries, the use of CAM therapies in adult cancer populations ranged from 7–64%, with the average prevalence across all adult studies being 31.4%.[15]

Several studies have looked at the predictors of CAM use and found younger age, female sex, and higher education were associated with greater CAM use.[2, 4, 5, 13, 14, 16] We found that younger age was the only significant demographic variable associated with CAM use in our population.

Vitamins and antioxidants were the most commonly-used CAM therapies in this study.

Eisenberg et al[1] found a 130% increase in the use of high-dose vitamins and a 380% increase in the use of herbal remedies between 1991 and 1997. Published trials of vitamins and antioxidants, however, have not shown any significant benefits in the treatment or prevention of cancer.[18,19] Acupuncture and hypnotherapy are complementary therapies that have been shown to improve chemotherapy-related nausea and vomiting,[20–22] and also have benefit in pain control, yet these were not widely used by patients in our study (8% and 2% respectively).

We found, as have others,[4,5] that a significant proportion of CAM users used multiple different therapies, with 40% of patients using four or more therapies. Patients using multiple therapies commonly combined potential perceived “alternative anti-cancer treatments” (such as antioxidants), with more psychosocial therapies (such as imagery, aromatherapy, spiritual and relaxation techniques), suggesting that they hoped to gain a more holistic management of their disease than conventional medicine


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can offer. Our finding that 47% of patients reported using CAM therapies to improve their quality of life supports this. In our study, 29% of patients were using CAM therapies for the hope of cure, and 64% to either control cancer or prevent recurrence, which is consistent with other studies.[3,4] Controlled studies of cancer patients comparing CAM users and non-users have found no improvement in survival with CAM use,[13,23,24] and quality-of-life scores were significantly better in conventionally treated patients.[23] Patients, however, perceive that they are benefiting from CAM therapies; 70% of patients in our study felt that they had been moderately to extremely helpful in the treatment of their cancer.

Many patients in our study reported using CAM therapies during conventional treatment. CAM therapies are often advertised as safe for use, but drug interactions can occur and are seldom appreciated by patients or health professionals. Indeed, such interactions cannot be discussed when a health professional is not aware that a patient is taking CAM, which is frequently the case as this study shows. Potential antagonistic interactions of CAM with chemotherapy agents have been suggested,[25] and interactions of many herbal remedies with commonly-used medicines such as anticoagulants have now been shown.[26] Some herbal therapies can have hepatotoxic and nephrotoxic effects, which may be interpreted wrongly as disease progression and lead to unnecessary investigations, or at worst precipitate organ failure.[27,28] "Alternative diets" can be poorly balanced and lead to nutritional deficiencies and weight loss.[29] Despite these documented adverse effects, as well as the many unknown potential side effects of some CAM therapies, 89% of patients in this study thought that they were safe. Ideally, patients should be aware of such interactions whilst receiving conventional treatments.

The financial cost to patients of many CAM therapies is not insignificant. Estimates of monthly costs ranged from no cost for patients altering their diet, to NZ$660 for some specific immune-based therapies. Comparable financial costs have been found in Australia, but the majority of patients felt they were getting value for money.[5]

Previous studies have found that under half of patients inform their physicians of their use of CAM therapies,[1,3,4] which is consistent with our results (41% disclosure). It is important that oncologists are able to identify patients taking CAM therapies, as some of these have been shown to have detrimental effects on health and interfere with conventional treatments. Older patients were significantly less likely to report CAM use to their oncologist, however, reasons for non-disclosure were not specifically asked. We suggest that older patients may still perceive the traditional "paternalistic" doctor–patient relationship and fear their oncologist's disapproval. The addition of direct questioning about CAM use as part of history taking has been shown to significantly increase disclosure of the use of these therapies to the oncologist.[16] Therefore, including nonconfrontational questioning about CAM therapies as part of the standard history and examination of oncology patients will need to become routine if we are to increase our knowledge of CAM use.

While many 'alternative' cancer therapies promoted for use instead of mainstream medicine have no proven benefit and indeed may be harmful, there is evidence supporting certain 'complementary' therapies (such as acupuncture, hypnosis, imagery and relaxation) as being useful adjuncts to conventional medicine in improving cancer-related symptoms and quality of life. It was this desire to obtain improved quality of life that was the most common reason cancer patients chose to

use CAM therapies in our study. This indicates that we need to help patients identify those CAM therapies that are likely to benefit them, and to provide greater access to these in the New Zealand public health system. We also need to have ready access to reliable patient information regarding such therapies, which should be discussed as a matter of routine with cancer patients.

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